

Amendments to the Specification:

Please add the following new paragraph after paragraph [0014]:

FIG. 4 illustrates the concept of bond strength and semantic distance in one or more embodiments of the invention.

Please add the following new paragraphs after paragraph [0040]:

As the set possible meanings is being compiled, probabilities are assigned to each. These values reflect the likelihood that the user really means a certain concept. Because many words have multiple meanings, probabilities for implied meanings for words may be manually preassigned. These values are used in this phase of the engine processing, in order to estimate what meanings are most likely implied by particular search words. Other factors that affect the probabilities given to meanings are: was the meaning matched by a morphed word or the word in its "pure" form (favor pure forms); was the meaning only partially matched the input word(s) (if so, reduce probability); was the meaning the result of a match on multiple words (if so, increase probability); the commonness of the meaning implied (favor more common meanings).

Another kind of "concept induction" is applied to the analysis at this point. All implied meanings are examined and compared against each other, so that relationships might be discovered. If there is a connection between two meanings, those meanings will receive a bonus to their probability factor, because the implication is that those particular meanings of the user's words were what the user wanted (these comparisons actually occur between the all the meanings that are possibilities for one search word against all those for each other search word). Thus if the user enters "Turkey Poultry", the meaning of "turkey" as a kind of food will receive a bonus, because a connection between a meaning deriving from "poultry" relates to this particular meaning of "turkey". This is extremely valuable in tuning meaning probabilities, because without this weighting, for example, the meaning "Turkey, the country" might have been preferred.

Please add the following new paragraphs after paragraph [0044]:

FIG. 4 illustrates the concept of bond strength and semantic distance in one or more embodiments of the invention.

Using an exemplary lexicon, FIG. 4 illustrates how distance and closeness of meaning between meanings can be quantified within the semantic space. Distances are shown between the element "ski" and all other elements within the semantic space. Using three classes of bond strengths the degree of closeness between meanings may be discovered. A "strong relationship" exists between "ski" and "skiing" as does between "ski" and "athletic equipment." Between "skiing" and "sport" there is a weaker than strong relationship known as a "medium relationship". This is because when you think of the root term "skiing" one doesn't quickly think also of "sport". Going from "ski" to "skiing" however, the average person would more likely associate or think "skiing" if given the term "ski". The direction in the arrows in the bond strengths, indicates the direction of association. "A --> B" in FIG. 4 means that if you are given A, how likely is it or closely would one associate the meaning B. Going the other direction between the same two elements may produce a different bond strength. A "weak relationship" would be displayed between "ski" and "K2 ski" (when you think of 'ski,' "K2 ski" doesn't closely come to mind). However, if one were to go from "K2 ski" to "ski" this might be construed as a strong relationship since one would naturally associate "ski" if given "K2 ski".

FIG. 4 also shows semantic distances between elements. "Ski" and "skiing" have only a distance of 2 between them while "skiing" and "sport" have a distance of 5 (7-2). The distance between "ski" and "sport" is 7. When traveling from parent to child or vice-versa, the distances can be simply added/subtracted but when changing the direction of travel, a penalty may be imposed upon the distance calculation. Take for example the distance between "ski" and "athletic equipment company". Judging merely on a linear basis, the distance might be 12. But since the path from "ski" to "athletic equipment" switches direction twice (it starts down to "K2 ski" and then across the lateral bond to "2" and then up to "athletic equipment company") a penalty or scaling factor would cause the distance between "ski" and "athletic equipment" to be much larger than 5 just 12 especially given their lack of connectedness. As described above penalties may be added when the direction of traversal is switched or when a lateral bond is crossed. Meaning-by-meaning, distances between elements may be calculated and stored for future use in search retrieval.